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TRANSMITTAL OF APPEAL BRIEF (Large Entity)

Docket No.
ITO.0549US

In Re Application Of: **Brian G. Johnson**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
10/634,146	August 4, 2003	Michael J. Weinberg	219096	2827	5099

Invention: **Optically Accessible Phase Change Memory**

COMMISSIONER FOR PATENTS:

Transmitted herewith is the Appeal Brief in this application, with respect to the Notice of Appeal filed on:
May 4, 2007

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Dated: **June 7, 2007**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Applicant:	Brian G. Johnson	§	Art Unit:	2827
Serial No.:	10/634,146	§	Examiner:	Michael J. Weinberg
Filed:	August 4, 2003	§	Atty Docket:	ITO.0549US (P16246)
For:	Optically Accessible Phase Change Memory	§		

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APPEAL BRIEF

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Date of Deposit: June 7, 2007
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Nancy Meshkoff

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REAL PARTY IN INTEREST

The real party in interest is the assignee Ovonyx, Inc.

RELATED APPEALS AND INTERFERENCES

None.

STATUS OF CLAIMS

Claims 1-10 (Rejected).

Claims 11-36 (Canceled).

Claims 1-10 are rejected and are the subject of this Appeal Brief.

STATUS OF AMENDMENTS

All amendments have been entered.

SUMMARY OF CLAIMED SUBJECT MATTER

In the following discussion, the independent claims are read on one of many possible embodiments without limiting the claims:

1. A method comprising:

optically programming a phase change memory after electrically programming said memory (Specification at page 7, line 19 to page 8, line 1) (Figure 2, item 14).

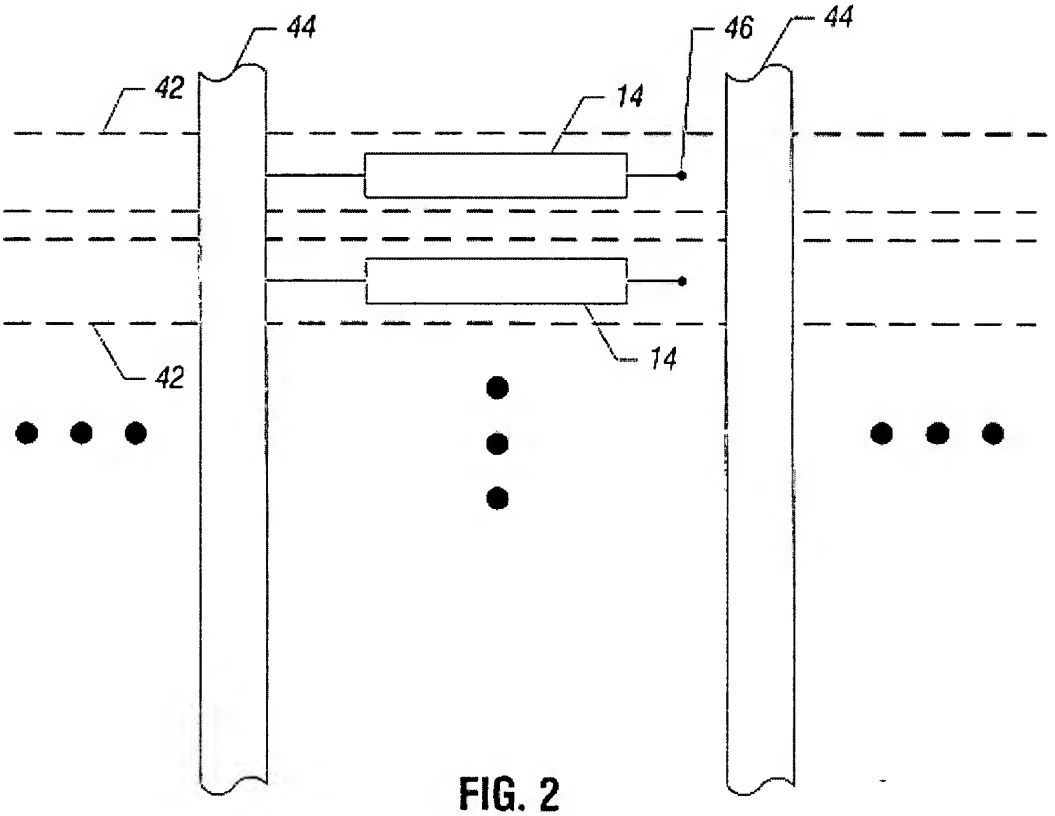

FIG. 2

At this point, no issue has been raised that would suggest that the words in the claims have any meaning other than their ordinary meanings. Nothing in this section should be taken as an indication that any claim term has a meaning other than its ordinary meaning.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. **Whether claims 1-10 fail to comply with the written description requirement under 35 U.S.C. § 112, first paragraph.**

ARGUMENT

A. Do claims 1-10 fail to comply with the written description requirement under 35 U.S.C. § 112, first paragraph?

The office action suggests that the fact that transitions must occur specifically from the crystalline to the amorphous phase is not taught by the specification.

In this case, the claim in issue calls for optically programming a phase change memory after electrically programming it. The optical programming generally causes a crystalline to amorphous change. Electrical programming is used for going from amorphous to crystalline phases. Necessarily, to be useable, the memory must be reprogrammed. Once it has been put in the crystalline phase by electrical programming, it cannot be reprogrammed unless it is transitioned back to the amorphous phase. This, necessarily, involves optically programming after electrical programming in order to make a useful memory.

This is all supported by the specification. The cells must be either set (crystalline) or reset (amorphous) before programming. See page 7, lines 19 to page 8, line 1. If they are set or reset, that means they must be crystalline or amorphous and in order to get them from the crystalline to the amorphous state, light programming would be done after electrical programming.

Similarly, at page 1, lines 4-12 it is explained that "phase change memories use phase change materials, i.e. materials that may be electrically switched between a generally amorphous and a crystalline state." If this is so, then it is necessary to switch them from crystalline to amorphous by light programming after electrical programming in some cases. Therefore, there is support necessarily within the specification.

In the same vein, at page 1, line 19 it is explained that the phase change memories are reprogrammed. If they are reprogrammed, they must be changed from crystalline to amorphous or amorphous to crystalline. This necessarily involves that crystalline to amorphous transitions be done by optical programming.

In short, to be workable, the memory must be able to be transitioned between crystalline and amorphous phases. If it is electrically transitioned to the crystalline phase, then sometimes it must be transitioned to the amorphous phase. From all of the material set forth in the specification, this is clearly required.

At page 8, lines 4-11, it is pointed out that it is advantageous to transform from amorphous to crystalline state using electrical programming. Then it is stated in the same material that light (*i.e.*, optical) programming may be used when going from the crystalline to the amorphous state. Thus, the specification teaches optical after electrical programming.

Therefore, the rejection should be reversed.

* * *

Applicant respectfully requests that each of the final rejections be reversed and that the claims subject to this Appeal be allowed to issue.

Respectfully submitted,

Date: June 7, 2007

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CLAIMS APPENDIX

The claims on appeal are:

1. A method comprising:

optically programming a phase change memory after electrically programming said memory.

2. The method of claim 1 including forming a phase change memory with a pair of parallel spaced electrodes and a phase change material between said electrodes.

3. The method of claim 2 including arranging said phase change material and said electrodes laterally.

4. The method of claim 3 including enabling light exposure of said phase change material.

5. The method of claim 4 including enabling light exposure through a thermally insulating material.

6. The method of claim 3 including enabling said phase change material to be electrically accessed through rows and columns.

7. The method of claim 6 including locating said rows and columns to enable light access to said cells.

8. The method of claim 7 including positioning one of said rows and columns below said phase change material.

9. The method of claim 8 including providing a via coupling one of said electrodes to said underlying row or column.

10. The method of claim 1 including using the phase change memory to convert an optical signal to an electrical signal.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.